UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

June 22, 2011

Mr. James Capp, Chief
Air Protection Branch
Environmental Protection Division
Georgia Department of Natural Resources
4244 International Parkway, Suite 120
Atlanta, Georgia 30354

Dear Mr. Capp:

We have reviewed the applicant's March 22, 2011, submission for the Prevention of Significant Deterioration (PSD) permit application for the Effingham County Expansion Project. Mackinaw Power, the applicant, proposes to expand the existing Effingham Power Plant located west of Rincon, Georgia. The modification will add two 180 megawatt (MW) combined cycle combustion turbines (CTs) that will primarily combust natural gas with ultra low sulfur fuel oil (0.0015% S) combusted as backup fuel. The CTs include two heat recovery steam generators and two duct burners. The expansion will also include the addition of one 14 MMBtu/hr natural gas auxiliary boiler, a fuel gas heater, a 10-cell mechanical draft cooling tower, a 6-cell cooling tower, and a fuel oil storage tank. The proposed project is subject to PSD review for the following pollutants: carbon monoxide (CO), nitrogen oxides, particulate matter, volatile organic compounds, and greenhouse gases (GHGs). Among other things, the response to comments included a Best Available Control Technology Analysis (BACT) analysis for GHGs.

Based on our review of the applicant's BACT analysis for GHGs, we provide the following comments to help ensure that the project meets all federal requirements, that the permit will provide all necessary information so that it is readily accessible to the public, and that the record provides adequate support for the permit decision:

1. In the BACT analysis for the CTs (page 12), the applicant stated that a "numerical GHG emission limit is not necessary or appropriate for GHG emissions based on the project's design and fuel use." However, when determining a PSD permit limit, a permitting authority must establish a numeric emissions limitation that reflects the maximum degree of reduction achievable for each pollutant subject to BACT (*e.g.,* GHGs) through the application of selected technology or technique. While the U.S. Environmental Protection Agency explained in its GHG Permitting Guidance that a permit may contain an operational standard, in lieu of a numerical BACT emissions limit, the permit record must demonstrate that a numerical emissions limit for the pollutant under review is infeasible and that the chosen operational standard is practically enforceable.[1] The administrative record in this case does not provide any explanation for why

[1] *See* PSD and Title V Permitting Guidance for Greenhouse Gases (March 2011) at 46 (*available at* http://www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf). *See also* the BACT definition at 40 CFR § 51.166(b)(12), which provides that "[i]f the reviewing authority determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the

establishing a numerical BACT emissions limit is infeasible. In general, a large, non-fugitive source of emissions should be able to directly measure emissions. In the event that there are technological or economic limitations that make a numerical limit infeasible, the Georgia Environmental Protection Division should provide that demonstration in the record for this permit.

2. Sections 1.3 and 1.4 of the March 22 submission briefly describe the CO_2 emissions from the auxiliary boiler and fuel gas heater, respectively. However, BACT is required on all emission units, and these sections do not include a BACT analysis or limit for either unit. While we do not expect the applicant to look at add-on control technologies (such as Carbon Capture and Storage) for these smaller units, the applicant should perform a BACT analysis to assess the efficiency of both the auxiliary boiler and the fuel gas heater and establish a BACT limit consistent with that analysis. Furthermore, the revised BACT analysis for these units should address GHGs as one pollutant as was done for the large CTs and not just CO_2 emissions.

If you have any questions regarding these comments or need additional information, please contact Eva Land at 404-562-9103.

Sincerely,

Gregg M. Worley

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Chief
Air Permits Section

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requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results."